

From: [Eberhardt, Maja](#)
To: [Candon Tanaka](#)
Cc: [Kissinger, Lon](#)
Subject: RE: WQS questions regarding Se and other question
Date: Friday, September 20, 2019 5:26:00 PM
Attachments: [Kalispe Water Quality Stds - Final 10-14-17.pdf](#)

Hi Candon,

I see that Lon has responded to you, and I was also preparing a response, so am sending that along as well.

Let me see if I'm understanding your chain of thought properly.

The aquatic life criterion for selenium in muscle tissue is 11.3 mg/kg dw for a skinless, boneless fillet. If you eat fish with 11.3 kg/day dw selenium concentrations, you should eat no more than 118 g/day (wet weight).

Or, if you eat 175 g/day, the selenium concentration should be below 7.61 mg/kg dw.

Therefore, the fish tissue-based selenium aquatic life criterion of 11.3 doesn't support the fish consumption rate of 175 g/day.

I see the discrepancy here. If I'm understanding correctly, then the thing to keep in mind is that the aquatic life criteria are not intended to protect human health, only the health of fish and other aquatic species, and the fish can apparently handle higher Se levels in their bodies than we can eat safely at 175 g/day. I can see that this could be unclear, particularly since the human health criteria are based on water and the aquatic life criteria are based on tissue, where one would expect the opposite. Maybe one way to think about it is, if HHC are back-calculated to the fish tissue-based values for an FCR of 175 g/day, one would expect that the HHC would be lower (more stringent) than the aquatic life criterion in fish tissue. Is that helpful? Let me know if you try that calculation, I'd like to be able to confirm that statement. I don't have time to dig into it, but maybe Lon can when he's back.

The Kalispel Tribe included a footnote for the human health criteria for consumption of fish only that allowed for converting the water-based criteria for highly bioaccumulative pollutants to a fish tissue-based value (attached, footnote A to the toxics table, see pages 13 and 14). EPA did not act on this because it was considered an implementation measure rather than a WQS, and therefore not subject to EPA approval action, but it is still part of the WQS and can be used to implement the water-based criteria. You could include a general footnote along these lines, or a footnote that's specific to selenium. Or if you're thinking of something different, just send it over and I'll take a look. For RSCs, as Lon indicated, there's some flexibility, and different chemicals can have different RSCs. However, when we take an action, we need to evaluate the scientific basis, particularly for values that are different from EPA's 304(a) recommendations, so we would need a rationale for the selection of the RSC (it's difficult to establish an exact number, so the assumptions tend to be broad and the RSC values are estimates). We used have adjusted RSCs for state promulgations.

I hope this is helpful. I'll be in the office (b) (6)

Thanks.

Maja

From: Candon Tanaka <ctanaka@sbtribes.com>

Sent: Friday, September 20, 2019 3:33 PM

To: Eberhardt, Maja <eberhardt.maja@epa.gov>

Cc: Kissinger, Lon <Kissinger.Lon@epa.gov>

Subject: WQS questions regarding Se and other question

Hello Maja,

Thanks for the previous emails on the selenium calculation and the other HHC calculations. I have the following questions that need clarification:

1. The selenium issue I was talking about is regarding the aquatic life criteria for Se which draws out a skinless, boneless filet (muscle) concentration of 11.3 mg/Kg dw and the fact that if you put that number through EPA's risk-based consumption equation, that concentration is too high to consume fish at a 175 g/day rate. I have attached a document that details the calculations I used. The EPA HHC is a water column number. Is there a way to address this through a footnote of some type or am I looking at this the wrong way. The point I'm trying to make is, I have had specific questions from our Fish and Wildlife Department asking if the 11.3 mg/Kg dry weight is safe to consume and based on the calculations I can come up with it is not. The problem is clouded by the fact that the HHC is a water column number.
2. Is it allowable to use different RSCs for different chemicals?

Thanks,

Candon Tanaka

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